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## THE GARDEN CALENDAR

A radio talk prepared by W. R. Beattie, Bureau of Plant Industry, delivered by Morse Salisbury in the Department of Agriculture period of the National Farm and Home Hour, broadcast by a network of 48 associated NBC radio stations, Tuesday, August 16, 1932.

Last Tuesday, Mr. Beattie told you how scientists have very largely overcome the effects of the cabbage "yellows" disease. He asks me to tell you today about the fight against another similar disease that causes great losses to tomato growers. It is the tomato "wilt" which has spread to the soils of most of the tomato-growing sections of the Southern and Central States.

Tomato plants start off all right on wilt-infected soils. Then, about the time they begin to set a good crop of fruit, the tips of the branches wilt, and in a few days the whole plant is dead.

You will remember that in fighting cabbage "yellows" the workers of the Department, and the University of Wisconsin, selected the cabbage plants that made good heads on infected soil and grew seed from them. That was selection pure and simple. In fighting tomato wilt, the scientists have resorted to both selection and breeding.

They began by planting a large number of varieties of tomatoes side by side on wilt-infected soil, and selected those that showed the greatest natural resistance. Then they used these resistant plants for further selection and crossing to produce new varieties.

Then they took the seed resulting from the crosses, planted it in infected soil, then transplanted the plants into infected fields. The scientists discarded thousands of the plants the first season. They grew others the second and third years. Finally, a few disease-resistant tomato varieties producing good fruit came out of the years of work.

One of the earlier productions of wilt-resistant tomatoes was the Norton. This is a selection of the variety known as Stone. The original fruit from which it descended was selected by Mr. J. B. S. Norton of the University of Maryland. He gave it and several other seed samples to the late Frederick J. Pritchard of the Department in the spring of 1915.

Another of the resistant varieties developed at an early stage of this work was the "Marvol," which was a selection from a French variety, and there were other varieties such as the Louisiana Red, the Louisiana Pink, the Columbia, and the Arlington. These varieties were planted on wilt-infected soils in the South, and showed remarkable resistance to the disease.

Pritchard and his associates next tackled the job of producing wilt-resistant strains of early-fruited varieties in order to supply southern early-tomato growers with a variety that could be grown on the wilt-infected soils of

the South. Out of this work came the variety known as "Marglobe," one of the finest canning tomatoes ever produced. . . . But even the Marglobe did not quite satisfy the growers of early tomatoes and Pritchard kept on. The next product of his work was the "Break O'Day," a truly wonderful early tomato which is remarkably resistant to the wilt disease. Break O'Day is resistant to the Fusarium wilt of the vines, and to the nail-head rust of the fruits. It is slightly resistant to several of the blights, and especially leaf spot, and early blight. The fruits seldom crack badly, have a good color, and far exceeded the expectations of the originator.

Shortly before his untimely death, Pritchard originated another variety known first as "Scarlet Topper," but later changed to the name of "Pritchard," in his honor. You can now get seed of the "Marglobe" and "Break O'Day" varieties from the seedsmen. Next year you undoubtedly will be able to get seed of the "Pritchard."

Pritchard's associates are continuing the work. They continuously seek new strains and varieties of disease-resistant tomatoes. With the wilt practically conquered, they are now selecting strains of tomatoes resistant to leaf diseases such as leaf spot and blight.

They also are working on another line. Years ago, canneries wanted a tomato that would give them the bulk of their pack during a short period. Today, the manufacturers want the deliveries of tomatoes to extend over a much longer period, and so the scientists are trying to produce varieties that will give an extended season. The work with the wilt-resistant tomato varieties has again demonstrated the fact that, given a real need, and facilities for conducting the investigations to meet the need, the practical scientist will meet it. He may work years before success comes, but when it does come, it means an enormous saving to the affected industry. We didn't have so many plant diseases to contend with 30 or 40 or more years ago. The introduction and spread of these pests is something of a recent development. About the only way to overcome them and go on growing good crops is to develop disease-resistant strains and varieties.